Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1. - 3. (Cancelled)

Claim 4. (Currently Amended) A computer implemented method for arranging polymers for combinatorial synthesis of the polymers on a substrate comprising:

obtaining a list of polymers to be synthesized on the substrate; and

dividing the polymers to be synthesized on the substrate into a plurality of ~~unassigned~~ blocks, wherein each ~~of the unassigned~~ block ~~of the plurality of unassigned blocks~~ comprises one or more related polymers from the other ~~unassigned~~ blocks;

~~assigning each of the unassigned block to an empty slot on the substrate for synthesis by minimizing edge count comprising:~~

selecting a subset of [[the]] blocks from the plurality of ~~unassigned~~ blocks; [[and]]

assigning one selected block [[of]]from the ~~unassigned blocks in the~~ subset of blocks to an [[the]]empty slot, wherein the one assigned block creates an arrangement of the polymers resulting in a least edge count among the subset of blocks wherein the least edge count minimizes unintended illumination; and

synthesizing the arranged polymers in their respective assigned blocks on the substrate.

Claim 5. (Currently amended) The method of claim 4 further comprising repeating the steps of selecting and assigning ~~each unassigned block to an empty slot on the substrate for synthesis by minimizing edge count~~ until all blocks are assigned.

Claim 6. (Currently amended) The method of claim 5 wherein the assigning ~~each unassigned block to an empty slot on the substrate for synthesis by minimizing edge count slot~~ further comprises:

computing a plurality of edge counts after placing each assigned block into the empty slot; and

comparing the edge counts from each assigned block and choosing the assigned block that has the least edge count.

Claim 7. (Currently amended) The method of claim 6 wherein the ~~unassigned~~ blocks are ordered randomly and the selecting step comprises [[first]] selecting the first subset among the unassigned blocks.

Claim 8. (Previously presented) The method of claim 7 wherein the last of the subsets of unassigned blocks has no more than 100 blocks and the created arrangement of the polymers has at least 20 blocks and no more than 100 blocks.

Claim 9. (Previously presented) The method of claim 7 wherein the last of the subsets of unassigned blocks has no more than 1000 blocks and the created arrangement of the polymers has at least 100 blocks and no more than 1000 blocks.

Claim 10. (Previously presented) The method of claim 7 wherein the last of the subsets of unassigned blocks has no more than 10000 blocks and the created arrangement of the polymers has at least 1000 blocks and no more than 10000 blocks.

Claim 11. (Previously presented) The method of claim 7 further comprising synthesizing the arrangement of the polymers of all the assigned blocks wherein the polymers are oligonucleotides.

Claim 12. (Previously presented) The method of claim 11 wherein the combinatorial synthesis is radiation directed synthesis.

Claim 13. (Previously presented) The method of claim 12 wherein the radiation directed synthesis comprises steps of controlling irradiation to active synthesis site using a mask.

Claim 14. (Previously presented) The method of claim 13 wherein the edge count is a weighted edge count taking into account distance to cell leaking radiation.

Claims 15. - 24. (Cancelled)

Claim 25. (Currently amended) A computer software product for arranging polymers for combinatorial synthesis of the polymers on a substrate comprising:

code for obtaining a list of polymers to be synthesized;[[and]]

code for dividing the polymers to be synthesized on the substrate into a plurality of ~~unassigned~~ blocks, wherein each of the ~~unassigned~~ blocks ~~of the plurality of unassigned blocks~~ comprises one or more related polymers from the other ~~unassigned~~ blocks; [[and]]

~~code for assigning each of the unassigned block to an empty slot on the substrate for synthesis by minimizing edge count comprising:~~

code for selecting a subset of [[the]]blocks from the plurality of ~~unassigned~~ blocks; [[and]]

code for assigning one selected block [[of]]from the ~~unassigned blocks in the~~ subset of blocks to [[the]]an empty slot, wherein the one assigned block creates an arrangement of the polymers resulting in a least edge count among the subset of the blocks wherein the least edge count minimizes unintended illumination;

code for synthesizing the arranged polymers in their respective assigned blocks on the substrate; and

a computer readable medium for storing the code.

Claim 26. (Currently amended) The computer software product of claim 25 further comprising code for repeating execution of the codes of selecting and assigning ~~each unassigned block to an empty slot on the substrate for synthesis by minimizing edge count~~ until all blocks are assigned.

Claim 27. (Previously presented) The computer software product of claim 26 wherein the code for assigning comprises:

code for computing a plurality of edge counts, each of the edge counts represents the result of assigning one block of the subset to the empty slot; and

code for comparing the edge counts and selecting a best fitting block, wherein the best fitting block has the least edge count.

Claim 28. (Previously presented) The computer software product of claim 27 wherein

the blocks are ordered randomly and the code for selecting comprises code for selecting the first subset among unassigned blocks.

Claim 29. (Previously presented) The computer software product of claim 28 wherein the last of the subsets of unassigned blocks has no more than 100 blocks and the created arrangement of the polymers has at least 20 blocks and no more than 100 blocks.

Claim 30. (Previously presented) The computer software product of claim 28 wherein the last of the subset of unassigned blocks has no more than 1000 blocks and the created arrangement of the polymers has at least 100 blocks and no more than 1000 blocks.

Claim 31. (Previously presented) The computer software product of claim 28 wherein the last of the subsets of unassigned blocks has no more than 10000 blocks and the created arrangement of the polymers has at least 1000 blocks and no more than 10000 blocks.

Claim 32. (Previously presented) The computer software product of claim 28 further comprising code for inputting size of the subsets.

Claim 33. (Previously presented) The computer software product of claim 28 wherein the edge count is a weighted edge count taking into account distance to cell leaking radiation.

Claims 34. – 40. (Cancelled).